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Ministry of Housing, Infrastructure and Outlying Districts

EN 1995-1-2 GL NA:2026

National Annex to
Eurocode 5: Design of timber structures –
Part 1-2: General – Structural fire design

Foreword

This Greenlandic National Annex (GL NA) replaces EN 1995-1-2 GL NA:2025.

This annex is based on DS/EN 1995-1-2 DK NA:2024.

Scope

This Annex is adapted to geographical and climatic conditions as well as national legislation and specifies how EN 1995-1-2:2007 and subsequent corrigenda are to be applied in Greenland.

The Annex provides Greenlandic national choices and complementary information. For any complementary information, it is specified whether it is normative or informative. Normative information comprises requirements to be followed.

The numbering in the Annex refers to the numbering in EN 1995-1-2:2007 or DS/EN 1995-1-2 DK NA:2024.

Overview of Greenlandic national choices and complementary information

Clause	Subject	Change
2.1.3(2)	Parametric fire exposure	National choice
2.3(1)P	Partial factors for material properties	National choice
2.3(2)P	Partial factors for load-carrying capacities	National choice
2.4.2(3)	Member analysis – Reduction factor for load combinations	Complementary information Normative
2.4.2(3) NOTES 1-3	Member analysis – Reduction factor for load combinations	National choice
4.2.1(1)	Method for determining cross-sectional properties	National choice
Annex G (1)	Simplified calculation method for encapsulated timber members	Complementary information Normative

National choices

2.1.3(2) Parametric fire exposure. Maximum temperature rises

In Clause 2, the maximum temperature rises during the cooling phase are taken as
$\Delta\Theta_1$ = 140 K.
$\Delta\Theta_2$ = 180 K.

2.3(1)P Design values of material properties

The partial factor for material properties in a fire situation is $\gamma_{M,fi}$ = 1,0.

2.3(2)P Design values of load-carrying capacities

The partial factor for load-carrying capacities in a fire situation is $\gamma_{M,fi}$ = 1,0.

2.4.2(3) Member analysis – Reduction factor for load combinations

NOTE 1 is replaced with the following:

NOTE 1: An example of the relationship between the reduction factor η_{fi} and the load factor $Q_{k,1}/G_k$ is given in EN 1990 GL NA:2024, A1.3.1(8).

NOTE 2 is replaced with the following:

NOTE 2: Where the ratio between the characteristic values of variable and permanent loads, Q_k/G_k, is ≥ 1,0, a simplified value of η_{fi} = 0,65 may be applied, except for areas with imposed loads corresponding to Category E in accordance with EN 1991-1-1:2007, where η_{fi} = 0,75. For Q_k/G_k < 1,0, η_{fi} is determined according to Expressions (2.5a) and (2.5b) or EN 1990 GL NA, Figure A1.3.1 GL NA.

NOTE 3 is replaced with the following:

NOTE 3: Expressions (2.9a) and (2.9b) shall be used instead of Expression (2.9) in accordance with the national choice in EN 1990 GL NA:2024 when calculating load combinations in STR.

4.2.1(1) Method for determining cross-sectional properties

Advanced calculation methods may be used, provided they are well documented both theoretically and experimentally.

Complementary information
Normative

2.4.2(3) Member analysis Reduction factor for load combinations
Expression (2.9a) is replaced by:

$$\eta_{fi} = \frac{G_k + \psi_{fi}\, Q_{k,1}}{\gamma_G\, G_k + \gamma_{Q,1}\psi_{0,1}\, Q_{k,1}} \qquad (2.9a)$$

Annex G: Simplified verification method for verification of encapsulated timber members
(1) The mechanical performance of fully encapsulated timber members may, in a simplified manner, be verified by reducing the cross-section of the timber members on all protected sides by a depth of a pyrolysis zone equivalent to $d_{char,n} = 0$ and $d_{ef} = k_0 \cdot d_0 = 15$ mm, and verifying that the timber member with the reduced effective cross-section has the required mechanical performance for a time corresponding to the fire resistance class of the protection system. Verification shall be carried out on the basis of the design mechanical properties of timber in the effective cross-section at 20 °C.

The simplified method may not be applied for:
- fully encapsulated timber members where the fire resistance time, t_f, of the protection system is less than the required fire resistance time of the encapsulated timber member;
- fully encapsulated timber members where the charring initiation time of protected timber surfaces, $t_{ch,}$ is less than the required fire resistance of the protected timber member;
- verification of timber members for fire exposure other than standard fire; e.g. parametric or localised fire;
- verification of flat elements with compressive stresses on the fire-exposed side, e.g. panels in walls or top of decks.

NOTE 1: Fully encapsulated timber members are timber members where no surface is directly exposed to fire and does not show charring for a time corresponding to the fire resistance class of the protection system.

NOTE 2: For the calculation of design values for material properties at 20 °C, reference is made to 2.3(1) and 4.2.2(5).

NOTE 3: For the calculation of the charring initiation time, $t_{ch,}$ and failure time of fire protection, t_f, reference is made to 3.4.3.3 and 3.4.3.4.